

Optical Rotation / Polarimetry
Refer to Lehman Operation #31

Experimental Data:

Cell path length = 100. mm	Temperature = 25 °C	$\lambda = 589 \text{ nm}$ (sodium D)	solvent = ethanol	$\alpha_{\text{solvent}} =$ 0 °C
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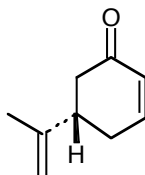
Tuesday/Thursday Lab:

	Mass (mg)	Volume (mL)	α_{avg}	$[\alpha]$ (calc.)	Smell: (mint , caraway or cannot tell)
<i>Unknown A</i>	4,002	25.00	-8.6°		
<i>Unknown B</i>	3,945	25.00	+8.8°		

Monday/Wednesday Lab:

	Mass (mg)	Volume (mL)	α_{avg}	$[\alpha]$ (calc.)	Smell: (mint , caraway or cannot tell)
<i>Unknown A</i>	3,993	25.00	-5.1 °		
<i>Unknown B</i>	3,978	25.00	+1.7°		

Consult the chemical literature and complete the following table of physical/ optical data for the carvone enantiomers. (To determine the absolute configurations (R- or S-) refer to the structure below of d-carvone.)



	boiling point	density	$[\alpha]$	Abs. Config.
<i>d-carvone</i>				
<i>l-carvone</i>				

Using the literature and experimental data complete the following questions for the unknowns A and B. Show your calculations for optical purity and enantiomeric excess.

	optical purity	% R-	% S-	Enantiomeric Excess: (%) <i>indicate d- or l-</i>	Smell
<i>Unknown A</i>					
<i>Unknown B</i>					